Item 92 FY97
04DS1
20 July 1995

PURCHASE DESCRIPTION

ANALYZER, NETWORK

AN2NT-D

1.0 GENERAL This procurement requires a scalar network analyzer.

2.0 CLASSIFICATION The equipment shall meet the requirements of MIL-T-28800( ),Type III,
Class 5, Style E, and Color R for Navy shipboard, submarine and shore applications with the
following modifications and exceptions:

a. The Electromagnetic Interference requirements (EMI) of MIL-T-28800( ) are limited to
CE01 (relaxed 20 dB), CE03 (broadband limits relaxed 20 dB below 200 kHz), CS01,
CS02 (0.05 to 100 MHz), CS06, RE01 (0.03 to 15 kHz), RE02 (14 kHz to 1 GHz) and RS03.

b. The digital readout shall be designed for use at arms length.

3. 0 OPERATIONAL REQUIREMENTS The equipment shall be capable of absolute power and power ratio measurements within the minimum specifications identified below.

3.1 Measurement Characteristics

3.1.1 Frequency Range: 100 MHz to 18 GHz
3.1.1.1 Horizonal Resolution: At least 400 points

3.1.2 Dynamic Range: At least 60 dB (-50 dBm to 10 dBm)

3.1.3 Inputs: Three. Channels A, B, and R (reference).
Ratio measurement capabilities of A / R and B / R.

3.1.4 Vertical Scaling
3.1.4.1 Resolution: At least 0.1 dB/div to 10 dB/div in 1,2,5 increments
3.1.4.2 Offset: At least ±50 dB each channel (0.1 dB resolution)
3.1.4.3 Auto: Automatic selection of offset and resolution from optimum display of test data.

3.1.5 Cursor: Adjustable marker of frequency and amplitude on display active trace.
3.1.5.1 Delta: Second cursor displays difference between reference and main cursor.
3.1.5.2 Min/Max: Automatic move cursor to min/max points of active trace.

3.1.6 Accuracy (Detected power > -35 dBm)
3.1.6.1 Power / Transmission / Reflection (return loss): ±1 dB

3.1.7 Display: The equipment shall contain a rectangular graphic display of no less than 76 mm (3 in) x 102 mm (4 in). The horizontal and vertical centerlines shall be marked in 0.2 division sub-increments and one division cardinal increments.

3.2 External Input The equipment shall be provided with an external sweep input compatible with a 0 to 10V ramp signal such that the ramp will cause a full-screen horizontal deflection of the CRT beam.

3.3 Detectors (2 required)

3.3.1 Function: DC detection
3.3.1.1 Dynamic Range: At least 60 dB (-50 dBm to 10 dBm)
3.3.2 Impedance: 50 ohms nominal
3.3.3 Connector: Type N(m)
3.3.4 Return Loss: > 15 dB (SWR 1.43:1)

3.4 SWR Autotester (Directional Bridge) (1 required)

3.4.1 Directivity: ≥ 35 dB
3.4.2 Function: DC detection
3.4.2.1 Dynamic Range: At least 60 dB (-50 dBm to 10 dBm)
3.4.3 Impedance: 50 ohms nominal
3.4.4 Input Connector: Type N(f)
3.4.5 Test Port Connector: Type N(f)
3.4.6 Return Loss: > 15 dB (SWR 1.43:1)

4. 0 GENERAL REQUIREMENTS

4.1 Power Source MIL-T-28800( ) nominal power source requirements are invoked. Maximum power consumption: 125W.

4.2 Lithium Batteries Per MIL-T-28800( ), lithium batteries are prohibited without prior authorization. Requests for approving the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall

apply only to the specific model proposed.

4.3 Weight ≤ 30 kg (66 lb)

4.4 Accessories

4.4.1 Shielded open {Type N(m)}
4.4.2 Short {Type N(m)}
4.4.3 50 Ohm Termination {Type N(m)}
4.4.3.1 VSWR: Less than 1.1:1 up to 4 GHz
Less than 1.2:1 up to 12.4 GHz
Less than 1.3:1 up to 18 GHz
4.4.4 10 dB Attenuator {Type N(m) one end, Type N(f) other end}}
4.4.4.1 VSWR: Less than 1.2:1 up to 8 GHz
Less than 1.3:1 up to 12.4 GHz
Less than 1.5:1 up to 18 GHz
4.4.5 Adapter: Type N(m) to Type N(m)
4.4.6 Adapter: Type N(m) to Type N(f)

4.5 Digital Interface A digital interface shall be provided in accordance with MIL-T-28800( ).